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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,760	03/15/2001	Daniel Amrany	60705-1670	5306

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EXAMINER
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VARTANIAN, HARRY

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/808,760

Applicant(s)

AMRANY ET AL.

Examiner

Harry Vartanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-18, and 20-31 is/are rejected.
- 7) ☒ Claim(s) 4 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because the part numbers **404-406 in figure 7 do not correctly correspond to the description on pg 20, lines 4-16.** Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitation "firmware" in claim 17 is not in the specification of the ***provisional or non-provisional application.***

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5, 6-8, 9-12, and 20-27 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. In claims 5, 6, and 20-21 the meaning of the phrases "very small" and "not negligibly small" are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Moreover, there are no metrics defined in the specifications to clarify the meaning of these phrases.

Claims 7-12 and 22-27 are rejected for being dependent on a 112 rejected base claim.

***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-3, 13-18, 28, and 30-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Yeap et al(US Patent# 6,052,420). Regarding Claim 1, Yeap et al interference cancellation system for DSL meets the following limitations of the claim:

a modem disposed at a customer premises; **(Column 10, lines 26-31)**

a local loop terminating at the customer premises and connected to the modem, the local loop for carrying modem communications; **fig 2;**

a first circuit disposed to sense the signal received on the local loop; **"noise estimation unit" in abstract and fig 2**

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a second circuit configured to obtain a common mode signal from the local loop;  
**fig 2, item 17; (Column 5, line 53 to Column 6, line 6)**

a processor circuit disposed within the modem, the processor configured to reduce crosstalk on the local loop through computations based upon both the signal received on the local loop and the common mode signal. **(Column 5, line 53 to Column 6, line 6); See (Column 1, lines 14-32) for recitation of crosstalk**

Regarding Claim 2, applicant admits that the NEXT cancellation is well known in the DSL prior art in Pg 2, line 18 to Pg. 4, line 20.

Regarding Claim 3, Yeap et al meets the following limitations of the claim:

wherein the telecommunication system is a digital subscriber line DSL system and the modem is a DSL modem. **(Column 2, lines 30-56)**

Regarding Claim 13, Yeap et al meets the following limitations of the claim:

wherein the processor is implemented in circuitry. **See Abstract for noise suppression circuit.**

Regarding Claim 14, Yeap et al meets the following limitations of the claim:

wherein the processor circuitry includes hardware. **See Abstract for noise suppression circuit; fig2; (Column 9, lines 60-62)**

Regarding Claim 15, Yeap et al meets the following limitations of the claim:

wherein the processor circuitry includes software. **See Abstract for noise suppression circuit; fig2; (Column 9, lines 60-62)**

Regarding Claim 16, Yeap et al meets the following limitations of the claim:

wherein the processor circuitry includes a combination of hardware and software. **See Abstract for noise suppression circuit; fig2; (Column 9, lines 60-62)**

Regarding Claim 17, Yeap et al meets the following limitations of the claim:

wherein the processor circuitry includes firmware, micro-coded into hardware. **See Abstract for noise suppression circuit; fig2; (Column 9, lines 60-62)**

Regarding claim 18, the rejection for claim 1 above also applies here. The subtraction or removal of crosstalk is met by the fact that common and differential mode noise are a form of crosstalk and Yeap et al tries to suppress the two (abstract).

Regarding claim 28, the rejection for claim 1 above also applies here.

Regarding claim 30, the rejection for claim 1 above also applies here.

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Regarding claim 31, the rejection for claim 3 above also applies here.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeap et al. Although Yeap et al does not mention the use of a covariance matrix to demodulated the received DSL signal, the use of covariance matrices in DSL demodulators was well-known in the art at the time of the invention(See US Patent#5,295,159 Column 2, lines 56-68).

***Allowable Subject Matter***

6. Claims 4 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 571.272.3048. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571.272.3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian  
Examiner  
Art Unit 2634

HV

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**